providing a substrate and a wiring line layer above the substrate;

forming a first antireflective coating above the wiring line layer;

forming a cap layer above the first antireflective coating, wherein the cap layer and the first antireflective coating have different dielectric constants;

etching through portions of the first antireflective coating, a portion of the cap layer and a portion of the wiring line layer to form wiring lines separated by gaps; and

depositing a dielectric material within the gaps between the wiring lines using a plasma based process having both an etching component and a deposition component.

2. (Amended) The method of claim 1, wherein the first antireflective coating absorbs portions of radiation applied during a lithographic process and the cap layer creates destructive interference with portions of radiation applied during the lithographic process.

3. (Amended) The method of claim 1, wherein the cap layer cap layer also functions as a mask during the etching process.

4. (Amended) The method of claim 1, wherein an additional portion of the cap layer is etched during the plasma based process.

5. (Amended) The method of claim 1, further comprising forming a surface layer between the substrate and the wiring line layer.

6. (Amended) The method of claim 1, further comprising the step of removing the cap layer before depositing a dielectric material within the gaps.

7. (Amended) The method of claim 1, wherein portions of the cap layer are removed and portions of the cap layer act as a mask during the etching of the first antireflective coating and the wiring line layer.

8. (Amended) The method of claim 1, wherein after etching each wiring line has a portion of the cap layer thereon, the portion of a cap layer on each wiring line having a cross-sectional shape selected from the group consisting of a rectangle, a triangle, trapezoid, and a rectangle having its upper corners etched away.

9. (Amended) A method for forming conducting structures separated by gaps on substrate comprising:

providing a substrate and a wiring line layer above the substrate;

forming a cap layer above the wiring line layer;

etching through a portion of the cap layer and portions of the wiring line layer to form wiring lines separated by gaps, the wiring lines having a remaining portion of the cap layer thereon; and

depositing a dielectric material to substantially fill the gaps between the wiring lines, said dielectric material including a layer formed by high density plasma chemical vapor deposition.

10. The method of claim 9, wherein the cap layer is used as a hard mask during etching of the wiring line layer.

11. (Amended) The method of claim 9, wherein the cap layer comprises an antireflective coating.

12. (Amended) The method of claim 9, wherein portions of the cap layer are partially etched during the deposition of a dielectric material using high density plasma chemical vapor deposition.

13. The method of claim 9, wherein the cap layer comprises a material selected from the group consisting of a silicon material and an oxynitride material.

14. The method of claim 9, wherein the remaining portion of the cap layer on at least one wiring line has a rectangular shape in cross section.

15. The method of claim 9, wherein the remaining portion of the cap layer on at least one wiring line has a trapezoidal shape in cross section.

16. The method of claim 15, wherein the trapezoidal shape includes top and bottom surfaces parallel to one another and side surfaces that extend inwardly from the bottom surface to the top surface.

17. The method of claim 9, wherein the remaining portion of the cap layer on at least one wiring line has a triangular shape in cross section.

18. The method of claim 9, wherein the remaining portion of the cap layer on at least one wiring line has, in cross section, a rectangular shape having its corners etched away.

19. The method of claim 9, wherein the remaining portion of the cap layer is partially etched and redeposited into the gaps during the high density plasma chemical vapor deposition process.

20. (Amended) A method of forming conducting structures separated by gaps filled with dielectric material, comprising the steps of:

providing a substrate containing silicon, the substrate having a surface;

forming a surface layer comprising at least one material selected from the group consisting of titanium nitride, titanium silicide and a titanium-tungsten alloy, the surface layer disposed on the substrate surface.

forming a metal wiring layer on the surface layer, the metal wiring layer having an upper surface;

forming a protective layer comprising at least one material selected from the group consisting of titanium nitride, titanium silicide and a titanium-tungsten alloy, the protective layer disposed on the upper surface of the metal wiring layer, the protective layer having a top surface;

forming a cap layer comprising at least one material selected from the group consisting of an oxide, a nitride, a silicon –rich oxide, and an oxynitride, the cap layer disposed on the top surface of the protective layer;

forming a patterned photoresist layer above the cap layer, said patterned photoresist layer covering selected portions of the cap layer and exposing other portions of the cap layer;

etching the cap layer, the protective layer and the metal wiring layer to form the conductive structures separated by gaps; and

forming a layer of high density plasma chemical vapor deposition (HDPCVD) dielectric material within the gaps.

Please enter newly presented dependent claims 38-41.

38. (New) The method of claim 1, wherein the cap layer and the first antireflective coating are used as a hard mask.